

Atty. Dkt. No.10010381-1  
USSN:09/944,083

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**Amendments**

**In the claims:**

1.-6. (Canceled)

7. **(Currently Amended)** A method of producing an array of at least two different polymer ligands that differ by monomeric sequence covalently attached to different and known locations of a surface of a substrate, said method comprising:

(a) providing a substrate having a surface displaying olefin functional groups that consist of a single site of unsaturation by contacting said surface with a derivatizing composition comprising at least a first silane having an olefin functional group;

(b) converting said olefin functional groups to ligand reactive functional groups that produce covalent bonds with said at least two different polymer ligands upon contact with said ligands; and

(c) contacting said surface with said at least two different polymer ligands that differ by monomeric sequence to covalently bond said at least two different polymer ligands to different and known locations of said surface and produce said array.

8. (Original) The method according to Claim 7, wherein said polymer ligands are nucleic acids.

9. (Original) The method according to Claim 7, wherein said polymer ligands are peptides.

10. (Original) The method according to Claim 7, wherein said contacting step (c) comprises depositing each of said at least two different polymer ligands in a different region of said surface.

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11. (Original) The method according to Claim 7, wherein said ligand reactive functional group produced by said converting step (b) is an aldehyde.
12. (Original) The method according to Claim 11, wherein said aldehyde is a benzaldehyde.
13. (Original) The method according to Claim 7, wherein said ligand reactive functional group produced by said converting step (b) is an activated carboxylate ester.
14. (Original) The method according to Claim 7, wherein said ligand reactive functional group produced by said converting step (b) is an amine.
15. (Original) The method according to Claim 7, wherein said ligand reactive functional group produced by said converting step (b) is an imidazolyl carbamate.
16. (Currently Amended) A method of producing an array of at least two different nucleic acids that differ by monomeric sequence covalently attached to different and known locations of a surface of a substrate, said method comprising:
- (a) providing a substrate having a surface displaying olefin functional groups that consist of a single site of unsaturation by contacting said surface with a derivatizing composition comprising at least a first silane having an olefin functional group;
  - (b) converting said olefin functional groups to reactive functional groups that produce covalent bonds with said at least two different nucleic acids upon contact with said nucleic acids; and
  - (c) depositing at least two different nucleic acids that differ by monomeric sequence onto different and known regions of said surface to covalently bond said at least two different nucleic acids to said surface and

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produce said array.

17. (Original) The method according to Claim 16, wherein said nucleic acids are oligonucleotides.

18. (Original) The method according to Claim 16, wherein said nucleic acids are polynucleotides.

19. (Original) The method according to Claim 18, wherein said polynucleotides are cDNAs.

20. (Original) The method according to Claim 16, wherein said ligand reactive functional group produced by said converting step (b) is an aldehyde.

21. (Original) The method according to Claim 20, wherein said aldehyde is a benzaldehyde.

22. (Original) The method according to Claim 16, wherein said ligand reactive functional group produced by said converting step (b) is an activated carboxylate ester.

23. (Original) The method according to Claim 16, wherein said ligand reactive functional group produced by said converting step (b) is an amine.

24. (Original) The method according to Claim 16, wherein said ligand reactive functional group produced by said converting step (b) is an imidazolyl carbamate.

25. (Original) A ligand array produced according to the method of Claim 7.

26. (Original) A nucleic acid array produced according to the method of

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Claim 16.

27.-43. (Canceled)

44. (Original) A method according to claim 7 additionally comprising, following exposure of the array to a sample:  
reading the array.

45. (Original) A method comprising forwarding data representing a result of a reading obtained by the method of Claim 44.

46. (Original) A method according to Claim 45 wherein the data is transmitted to a remote location.

47. (Original) A method comprising receiving data representing a result of an interrogation obtained by the method of Claim 44.

48. (Previously Presented) The method according to Claim 7, wherein said olefin functional groups that consist of a single site of unsaturation each comprise a terminal  $-\text{CH}=\text{CH}_2$  moiety.

49. (Previously Presented) The method according to Claim 16, wherein said olefin functional groups that consist of a single site of unsaturation each comprise a terminal  $-\text{CH}=\text{CH}_2$  moiety.

50. (Previously Presented) The method according to Claim 7, wherein said first silane having an olefin functional group is undecenyltrichlorosilane.

51. (Previously Presented) The method according to Claim 16, wherein said first silane having an olefin functional group is undecenyltrichlorosilane.